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ABSTRACT

The purpose of this resource guide is to introduce teachers to a variety of instructional strategies and then relate these experiences to both natural and social environmental phenomena and settings. It is divided into six major parts. The first is concerned with developing student awareness of the outdoors through a number of methods, including guest speakers and classroom projects. The second part gives the teacher guidelines for relating the classroom to the outdoors. The following sections are concerned with the listings of numerous resources: instructional materials and resources, environmental education teacher training programs, and related television series. These four parts comprise over half of the guide. (Author/MA)

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HOW TO TAKE THE CLASSROOM OUT INTO THE ENVIRONMENT: A RESOURCE GUIDE

Richard Peters, Ed.D.

STATEMENT.

The world outside the walls of the school is an outdoor classroom within the confines of which students can explore and learn. This 'classroom' can be a vacant lot, a pasture, a forest area, a city street, or a mountain top.

Whatever the location of this outdoor workshop, while "there are several out-of-school activities that can be related to classroom instruction for purposes of intellectual enrichment and skills development"[1], teachers should begin to relate in-class instruction to both the natural and social environments outside the school and apply the unique characteristics of out-of-school phenomena to the learning process - when most advantageous to student inquiry.

The purpose of this resource guide is to introduce teachers to a variety of instructional strategies and then relate these experiences to both natural and social environmental phenomena[2] and settings.

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(1) Peters, Richard, HOW TO BRING THE OUTDOORS INTO THE CLASSROOM: A RESOURCE GUIDE. ERIC Information Analysis Center for Science, Mathematics and Environmental Education, The Ohio State University, 1975.

(2) natural phenomena: non-man made characteristics in a given geographical area; forests, lakes, marshes, mountains, ponds.

social phenomena: man-made characteristics in a given geographical area; bridges, dams, factories, homes, roads.

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PART I. HOW TO DEVELOP STUDENT AWARENESS OF THE OUTDOORS

Prior to developing an extensive student outdoor exposure program, the teacher(s) should concentrate on developing student awareness of both natrual and social environmental phenomena which they will encounter outside the confines of the school house walls.

There are several strategies which the teacher can employ in the development of awareness.

1. Audio-visual materials. There are several books, cassettes, films, filmstrips, games, posters, simulations and video tapes that can be used to expose students to a wide variety of environmental phenomena.

2. Guest speakers. Community resource people can be the link between the classroom and the world outside the school. They can inform students about specific sites and/or phenomena (ie, forests, recreational areas, manufacturing plants, housing developments).

3. Student investigations. Working in small groups or on an individual basis, students can conduct research and data collection studies. Using library facilities, audio-visual aides, etc., students can select a topic and do intensive research. Class reports can be prepared and presented.

4. Classroom projects. Students can become directly involved in a wide variety of projects related to outdoor

phenomena.

For example, they can study the geology of an area using rock and mineral samples. The geography of an area - as well as physical proximity (distance), can be studied with the use of a geodetic survey map and road maps.

PART II. HOW TO RELATE THE CLASSROOM TO THE OUTDOORS

The process of exposing students to both natural and social environments involves pre-planning, activity and follow-up.

This process is cyclical in nature and should be used continually in an attempt to relate the classroom and its related activities to the outdoors. It is an on-going process that must constantly be employed, evaluated and revised by students and teachers alike.

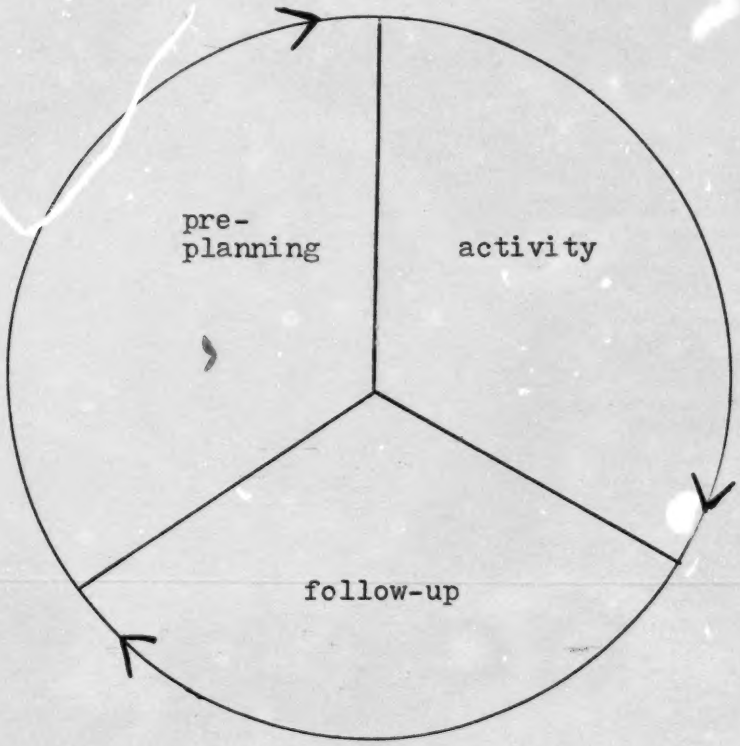

Diagram I The Cyclical Process of Student Exposure to Natural and Social Environments

I. Pre-Planning

Before going out into natural and social environments, students must be helped to clearly perceive the relationship(s) between the outdoor experience and in-class preperation.

There are several techniques and instructional resources that can be used in the student awareness-oriented pre-planning process.

1. Audio-visual materials. Films, filmstrips, slides, books, newspapers, cassette recordings, and video tapes can be used to focus student attention on phenomena and studies which will enrich their awareness and understanding of environmental surroundings. In planning outdoor activities, audio-visual instructional materials can be used to prepare students for these learning experiences.

They can study, in detail, the places that they will be going to and will have the opportunity to plan their itinerary of activities.

2. Guest speakers. Human resource personnel can be brought into the classroom for purposes of providing information and preparing students for their outdoor experiences. These resource people can provide students with background information and answer pre-activity

questions which they might have on their minds.

Guest speakers might include workers at factories/ mills, park rangers, truck drivers, social service personnel, land developers and/or construction workers.

3. Student investigations. Working in small groups or on an individual basis, students can select a natural and/or social environment related topic and investigate it in depth. They can employ the resources of the school library and the local newspaper or they may wish to interview local inhabitants.

As a result of these studies, students will have developed an in-depth awareness and understanding of those natural and/or social environmental phenomena prior to their direct exposure.

II. ACTIVITY

With student interest aroused and their appetite whetted for the outdoor experience, the classroom teacher can employ a wide variety of activities and learning strategies to reinforce direct student experiences.

1. Daytrips. Hiking activities that enable students to gain hands-on experiences and impressions of the surrounding

environment(s).

2. Field trips. Students explore selected natural and/or social environmental sites and gather data. The field trip enables large groups of students to tour the environment under the direction and supervision of teachers and chaperones and to gain exposure to phenomena otherwise outside the perceived life space of the individual student.

3. Graphic studies. Students experiment with graphic media devices and record their environmentally-oriented activities and impressions on film and/or video tape. With films and tapes, students can relive their exploits over-and-over again. The use of graphic media devices allows students to express themselves artistically and in a creative manner.

4. Learning labs. The outdoor site provides structured learning experiences for students of all ages and grades. Exposure to the lab site stations enables students to develop a keen awareness and understanding about the character of the natural world in which they live.

5. Nature studies. Students learn to function within a group setting and to work cooperatively with others. Classes can go out into natural environmental settings with specific studies in mind.

They may study plant life, hardwoods/softwoods, pond life, amphibians and reptiles, or beaver colonies. The nature study gives students the opportunity to investigate, in-depth, some aspect of the natural environment that is of interest to them.

6. Overnight camping trips. Students learn a degree of responsibility and of sharing. They realize that survival in the wilderness is contingent upon a high degree of cooperativeness and a healthy respect for the beauty and worth of nature.

7. Snowshoeing and ski-touring. These activities not only result in the improved physical conditioning of students but also enable students to explore their world during the winter months. Students gain a new perspective of the world that might normally be only familiar to them at other times of the year. Thus, students can conduct twelve month studies.

8. Walk throughs. These slow paced excursions allow students to see, close-up and at first hand, the character of their immediate natural and/or social environments.

SUGGESTED OUTDOOR ACTIVITIES

There are several learning activities in which students of differing ages and grades can involve themselves.

Students can:

1. collect rock samples, clarify rocks as igneous, metamorphic or sedimentary and make rock sample displays.
2. collect mineral samples and label them.
3. collect leaves and make a display.
4. collect plant specimens.
5. conduct a community land use study.
6. use surveying equipment to survey natural and social areas.
7. investigate clear cutting and selective cutting techniques in forest regions.
8. conduct a 'treasure hunt' in a wooded, seacoast or social environmental setting for purposes of collecting objects and making art objects.

9. conduct a weather study. Keep a log of daily temperatures and barometric readings.

10. conduct an animal tracks study. Make plaster castings.

11. use water testing kits and conduct water pollution studies.

12. take cassette recorders into the environment and record matural and/or social sounds.

13. conduct a study of crops grown in a given region. What are the effects of crop raising on the local economy? What types of occupations are related to crop production? What are some methods of harvesting? What are the effects of crop raising on the soil? What is contour farming? What is rotation of crops?

14. conduct an area study of man's use of natural resources for recreational use.

15. conduct compass (direction) studies.

16. conduct air pollution studies and tests.

III. FOLLOW-UP

After an outdoor activity has been conducted, there is need for the teacher to reinforce student learning.

1. Audio-visual materials. Films, filmstrips, slides and/or video tapes taken during the actual outdoor activity can be screened and discussed by the teacher and students.

In this way, the outdoor experience can be relived by the students.

2. Guest speakers. Community resource people can meet with students and elaborate upon their outdoor experiences.

With a direct experience as background information, students can ask intelligent questions and seek supplemental data.

3. Student investigations. Working in small groups or on an individual basis, students can conduct follow-up studies. In this way, the outdoor experience provides a basis for more-detailed student research and data collection.

PART III. INSTRUCTIONAL MATERIALS FOR CLASSROOM USE

I. BOOKS

Golden Stamp Book Of ...

Animals
Birds
Birds of the World
Fish
Insects
Rocks and Minerals
Trees
Snakes
Lizards (Golden Press)

The How and Why Wonder Books Of ...

Weather
Rocks and Minerals
Insects
Reptiles and Amphibians
Birds
Our Earth
Sea Shells
Wild Animals
Ants and Bees
Wild Flowers
Butterflies and Moths
Trees
Oceanography
Air and Water
Deserts
Fish
Ecology (Wonder Books)

Rachel Carson (Garrard)

The Complete Walker (Knopf)

Wilderness Trail (Johnson Publishing Company)

Appalachian Hiker (Appalachian Books)

Trees (Garrard)

Pond Life (Garrard)

Beavers (Garrard)

Bird Life (Garrard)

Too Much Garbage (Garrard)

Water (Garrard)

Bushcraft (Schochen)

Backpacking: One Step At A Time (Vintage)

II. DUPLICATING MASTERS AND TRANSPARENCIES

Ecology (Milliken Publishing Company)

Natural Science: Animals and Plants (Singer)

Oceanography (Instructor)

Birds (Milliken)

Plants (Milliken)

Plants and Animals (Milliken)

Insects (Milliken)

Amphibians and Reptiles (Milliken)

Mammals (Milliken)

Oceanography (Milliken)

Rocks and Minerals (Milliken)

Weather (Milliken)

III. FILMS

What Is Ecology? (Multi-Media Productions)

What Is Pollution? (Multi-Media Productions)

What Is Air Pollution? (Multi-Media Productions)

The Automobile: Beyond Air Pollution (Multi-Meida Productions)

Prosperity Equals Pollution (Multi-Media Productions)

Applied Ecology (McGraw-Hill Films)

America's Wonderland: The National Parks (National Geographic Society)

Snakes (Coronet)

Metals From The Earth (Robeck)

Baby Animals (McGraw-Hill Films)

Beaver Country (McGraw-Hill Films)

Birds of the Countryside	(Coronet)
Birds of the Sea	(Coronet)
The Changing Forest	(McGraw-Hill Films)
The Clean Town	(Hearst Metrotone News)
The Grizzly	(National Geographic Society)
Seasonal Changes in Plants	(McGraw-Hill Films)
Reptiles and Amphibians	(McGraw-Hill Films)
The Salmon Story	(Encyclopaedia Britannica Films)
Rocks and the Record	(McGraw-Hill Films)
Structure of the Earth	(Robeck)

FILM LOOPS

Earth Materials series	(Singer)
Urban Studies	(Singer)

a. Aerial View
b. Cross Section
c. Contrasts
d. Population
e. Occupations
f. Recreation
g. Culture
h. Government
i. Transportation
j. Industry
k. Commerce

Ecology and Environmental Studies (Singer)

a. The Biosphere
b. The Physical Environment
c. Man in the Biosphere
d. Man and Living Things
e. Man, Technology and Pollution
f. Population

IV. FILMSTRIP SERIES

An Introduction to Ecology: Six Basic Systems (EyeGate)

Ecological Imbalance: Six Systems Disturbed (EyeGate)

The Four Seasons (Encyclopaedia Britannica)

Natural Resources and You (Encyclopaedia Britannica)

Discovering Life Around Us (Encyclopaedia Britannica)

Different Kinds of Animals (Encyclopaedia Britannica)

Man's Earth Home (Encyclopaedia Britannica)

Living On Man's Earth (Encyclopaedia Britannica)

Conserving Our National Resources (Encyclopaedia Britannica)

Plant and Animal Relationships (Encyclopaedia Britannica)

Using Natural Resources (Encyclopaedia Britannica)

Audubon's Birds of America (Encyclopaedia Britannica)

SOUND FILMSTRIP SERIES

Keys to Basic Ecology (Olin)

a. Interrelation
b. Diversity
c.

Aggradation-Degradation	(EyeGate)
Why Animals Live Where They Live	(EyeGate)
Ecology: Land and Water	(EyeGate)
Ecology: Understanding The Crisis	(Encyclopaedia Britannica)
Fossils	(Encyclopaedia Britannica)
Environment Studies series	(Centron Educational Films)
Environmental Awareness	(Centron Educational Films)
Concepts in Ecology	(Centron Educational Films)
Our Ever-Changing Earth	(Singer)
Ecology in Nature's Communities	(Singer)
Animals of Land and Sea	(Singer)
Urban Life	(Singer)
Conservation for Today's America	(Singer)
Exploring the World of Nature	(Singer)
Understanding Weather and Climate	(Singer)
Rocks and Minerals	(Singer)
Communities in Nature	(Singer)
Interrelations in Nature	(Singer)

Our Environment series (EMC Corporation)

a. Fresh Water Communities
b. Sound and Noise
c. Aesthetics
d. Atmosphere
e. Salt Water Communities

V. FLASH CARDS

Wild Flowers

Trees

Western Birds

Winter Birds

Spring Birds

Summer Birds

Mammals of North America (Audubon Society)

VI. HOW TO DO ITs

How To Conduct A Field Trip (National Council for the Social Studies)

Outdoor Activities for Environmental Studies (Instructor)

Environmental Investigation series

a. Plants in the Classroom
b. Vacant Lot Studies
c. Differences in Living Things
d. Shadows
e. Wind
f. Snow and Ice
g. Oaks, Acorns, Climate and Squirrels
h. Nature Hunt
i. The Rise and Fall of a Yeast Community
j. Fish and Water Temperature (National Wildlife Federation)

Tips and Tricks in Outdoor Education (Interstate Printers and Publishers, Inc.)

VII. KITS

Communities in Nature: Ecology Learning Module

a. filmstrips
b. murals
c. board games
d. wall charts
e. student books (Singer)

Planning the Human Community: Ecology Learning Module

a. filmstrips
b. community planning maps
c. data bank
d. resource planning guides
e. cassettes
f. environmental evaluation checklist
g. the decision game
h. teacher's guide (Singer)

Sea Life Specimens (Instructo)

Fossils (Instructo)

Flannel Board sets

a. Study of Plant Growth
b. Plants and Foods
c. Animals in Streams and Ponds
d. Animals in the Woods (Instructo)

Flannel Board Bulletins

a. Thunderstorms
b. Trees
c. Farm (Audubon Society)

Investigations in Ecology (Charles E. Merrill Publishing Company)

VIII. POSTERS

Ecology Posters (Instructor Publications)

Ecology Poster Cards (Milton Bradley)

Using Natural Resources (Milton Bradley)

IX. PUZZLES

3 Animal Puzzles

a. Beaver
b. Skunk
c. Raccoon (Milton Bradley)

There are several puzzles on the market that can be purchased in department stores. Scenic puzzles can be used to expose students to different views of natural environments.

X. REPRINTS

"Pesticides: What Are They? What Do They Do?", Ranger Rick's Nature Magazine

"Air Pollution", Ranger Rick's Nature Magazine

"Water-What Would We Do Without It?", Ranger Rick's Nature Magazine

"Recycling", Ranger Rick's Nature Magazine

"The Mess We're In", Ranger Rick's Nature Magazine

(Natural Wildlife Federation)

XI. SLIDES

Ecology

Birds

Trees

Plants

Mammals (Audubon Society)

XII. WALL CHARTS

Birds

Mammals

Wild Flowers

Trees and Plants

Birds and Other Animals

Conservation (Audubon Society)

PART IV. INSTRUCTIONAL MATERIALS RESOURCES

Encyclopaedia Britannica Education Corporation
425 North Michigan Avenue
Chicago, Illinois 60611

Environmental and Outdoor Education Materials Company
Dowling, Michigan 49050

Eyegate House, Inc.
146 Archer Avenue
Jamaica, New York 11475

Golden Press
Western Publishing Company
Racine, Wisconsin

Holt, Rinehart and Winston, Inc.
383 Madison Avenue
New York, New York 10017

McGraw-Hill Films
14 Stockton Street
San Francisco, California 94133

National Audubon Society
950 Third Avenue
New York, New York 10022

National Education Association
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

Scholastic Book Service
904 Sylvan Avenue
Englewood Cliffs, New Jersey 07632

Stem, Inc.
Provo, Utah

The Instructor Publications, Inc.
Dansville, New York 14437

U.S.Department of the Interior
Washington, D.C. 20240

Wonder Books
Grosset and Dunlap, Inc.
New York, New York 10010